

REMARKS

Claims 1-3, 5-10, 16-17, 20-24, 29-35, 37, and 38 have been amended for clarity purposes. Claims 1-38 remain pending.

The Examiner has objected to claims 1, 5-9, 16, 20-23, 29, 32-35, and 37 because of various informalities. Such informalities have been corrected per the Examiner's suggestions or to comply with formal requirements. The Examiner is thanked for his thorough review and suggested corrections.

The Examiner has rejected claim 38 under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particular point out and distinctly claim the subject matter which applicant regards as the invention. Claim 38 has been amended according to the Examiner's suggestion. It is respectfully submitted that all pending claims meet the requirements of 35 U.S.C. §112.

The Examiner rejected claims 1-7, 10, 12-22, 26-34, and 36-38 under 35 U.S.C. §102(e) as being anticipated by Mikkonen (U.S. patent 6,885,633). The Examiner has also rejected claims 8, 9, 11, 23-25, and 35 under 35 U.S.C. §103(a) as being unpatentable over Mikkonen in view of Ammitzboell (US 6,934,292). The Examiner's rejections are respectfully traversed as follows.

Claim 1 is directed towards a "network system operable to forward data within a computer network." Claim 1 also recites "a first router having a plurality of first virtual interfaces configurable to correspond selectively to one or more physical ports of the network system, the first router being configured to enable the first virtual interfaces when the first router is assigned to be a designated router and to disable the first virtual interfaces when the first router is not assigned to be a designated router." Claim 1 also recites "a second router having a plurality of second virtual interfaces configurable to correspond selectively to one or more physical ports of the network system, the second router being configured to enable the second virtual interfaces when the second router is assigned to be a designated router and to disable the second virtual interface when the second router is not assigned to be a designated router." Claim 1 further requires "a supervisor module configured to assign a selected one of the first and second routers to be a designated router" and that "each first virtual interface of the first router has a same internet protocol (IP) address and media access control (MAC) address as each corresponding second virtual interface of the second router." That is, each virtual interface is configurable to correspond selectively to one or more physical ports, which allows flexible configuration of such virtual interfaces to any number of physical ports.

Claim 16 is directed towards a method and recites "configuring the first virtual interfaces to correspond to one or more selected physical ports, enabling the first virtual interfaces, and informing the second router of the selected one or more ports that correspond to the first virtual interface when the first router is assigned to be a designated router." There is a similar step recited for configuring the second router's virtual interfaces. In other words, the virtual interface is configured to correspond to one or more selected physical ports. Claims 29 is directed towards a computer program having computer program instruction within a computer readable product configured to cause a network device to perform operations similar to the operations of claim 16. Claim 37 is directed towards an apparatus that includes means for performing the operations of claim 16.

The primary reference Mikkonen is directed towards using two redundant network nodes for the purpose of providing fault tolerance. See Abstract. Figure 1 illustrates two network nodes 100a and 100b. Each network node includes four physical port interfaces (110a~110d for node 100a and 110e~110h for node 100b). Mikkonen specifically refers to these interfaces as "four physical network interfaces 110." See Col. 3, Lines 3-5. Mikkonen does not appear to teach or suggest any type of virtual interface that is configurable to correspond selectively to one or more physical ports or methods for configuring the same, in the manner claimed. Accordingly, it is respectfully submitted that independent claims 1, 16, 29, and 37 are patentable over Mikkonen.

The Examiner's rejections of the dependent claims are also respectfully traversed. However, to expedite prosecution, all of these claims will not be argued separately. Claims 2-15, 17-28, 30-36, and 38 each depend directly or indirectly from independent claims 1, 16, 29, or 37 and, therefore, are respectfully submitted to be patentable over cited art for at least the reasons set forth above with respect to claims 1, 16, 29, or 37.

Further, the dependent claims require additional elements that when considered in context of the claimed inventions further patentably distinguish the invention from the cited art. For example, claims 6-7 recite that "the first and second routers are each configured to maintain the same states for their virtual interface's administrative states as the other router." Claim 7 further recites communicating changes in administrative state from the first router to the second router, and visa versa. Claim 7 also recites "the first router is further configured to communicate to the second router a change of an administrative state of a selected first virtual interface to a down state when the first router is assigned as the designated router" and visa versa. Claim 7 also recites "the second router is further configured to ... change the administrative state of the selected second virtual interface to a down state when the first router communicates that its corresponding first virtual interface's administrative state has been changed to a down state" and

visa versa. Methods claim 22 recites a step for communicating administrative states from one router to another and changing administrative states at one router to be the same as the communicated states from the other router. The cited reference Mikkonen merely recites a generic "means 120 for observing the operation of another network node and producing an indication about the operational state of said another network node." See Col. 3, Lines 52-55. Mikkonen goes on to recite examples of monitoring and testing the other network node. However, Mikkonen fails to teach or suggest any mechanism for changing an interface state to be the same as state information communicated by another router, in the manner claimed. Thus, it is respectfully submitted that claims 6, 7, and 22 are further patentable over the cited art.

Applicant believes that all pending claims are allowable and respectfully requests a Notice of Allowance for this application from the Examiner. Should the Examiner believe that a telephone conference would expedite the prosecution of this application, the undersigned can be reached at the telephone number set out below.

Respectfully submitted,
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